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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/755,288	01/08/2004	John Christian Sorensen	10541-1783	1333

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EXAMINER	
TRIEU, THAI BA	

ART UNIT	PAPER NUMBER
3748	

DATE MAILED: 12/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/755,288	SORENSEN ET AL.	
	Examiner	Art Unit	
	Thai-Ba Trieu	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-36 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-36 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 12, 2005 has been entered.

Claims 1,5, 14, and 32-34 were amended.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement thereof, since the recitation of ***" without supercharger"*** introduce new matter not supported by the original disclosure. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. See In re Daniels, 144F.3d 1452, 46 USPQ2d 1788 (Fed. Cir. 1998); In re Rasmussen 650 F.2d 1212, 211 USPQ 323 (CCPA 1981).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 1 and its dependent claims 2-13 and 25-27; claim 14 and its dependent claims 15-24 and 29-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically,

- In claim 1, line 6, and claim 14, line 7, the recitation of "sole or primary" renders the claim indefinite, because sole and primary are non-equivalent alternative terms, and this structure is not a sole component in the clean channel, why this structure is a primary component and to which other component(s) this structure is compared, i.e. a filter, a plenum, or a turbocharger etc... Applicants are required to clarify and identify the sole component and the primary component.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 1, 5, 14-15, 19, 25-26, 27-32, and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Negri et al. (Patent Number 4,142,494), in view Pausch (Patent number 4,995,645).

Regarding claims 1, 5, 14-15, 19, 25-26, Negri discloses an air induction system for inducing airflow into the intake of an internal combustion engine (10) having a turbocharger (20, 34), said system comprising:

a clean air channel (an interior portion of an air cleaner 14 and a portion of 18 connecting to an air cleaner 14) without a supercharger containing primarily clean air directing airflow to an inlet of said turbocharger (20, 34) (See Figure 1);

said clean air channel having a structure located in front of the an inlet to said turbocharger (20, 34) comprising a diffuser (a portion of 18 connecting to an air cleaner 14) (See Figure 1) or means (a portion of 18 connecting to an air cleaner 14) for delivering and directing said airflow at least approximately 90 degrees from the direction of said airflow existing said outlet of the air filter to a direction of said airflow entering an inlet of said turbocharger (20, 34) (See Figure 1);

wherein said clean air channel (an interior portion of an air cleaner 14 and a portion of 18 connecting to an air cleaner 14) redirects said airflow at least approximately 180 degrees from a direction of said airflow entering said air inlet of said turbocharger (See Figure 1);

wherein said clean air channel comprises an angular diffuser (a portion of 18 connecting to an air cleaner 14) in fluid communication with said plenum (a portion of 18 directly connecting to turbocharger) at approximately a 90-degree angle (See Figure 1).

However, Negri fails to disclose said portion in fluid communication with said clean air channel being an expansion chamber having an increased cross sectional

area relative to a cross sectional area of a portion of the air channel; wherein said diffuser in communication with said expansion chamber; and said air channel comprising a conical diffuser with a cone angle that establishes an expansion rate of a cross sectional area encompassed within diffuser.

However, Negri fails to disclose the structural details of a structure in the clean channel comprising a diffuser in fluid communication with an expansion chamber.

Pausch teach that it is conventional in the elbow connection art, to utilize a structure (10) comprising diffuser (See Figure 1) being configured to have an interior surface that both longitudinally increasing in cross-sectional area and radially diverting flow of said airflow; and an expansion chamber (30) in fluid communication with and located downstream of the diffuser, the expansion chamber (30) being configured to divert the flow of said airflow (See Figure 1); said air channel comprising a conical diffuser with a cone angle that establishes an expansion rate of a cross sectional area encompassed within diffuser; and said structure performing the function of restoring pressure head and substantially increasing the velocity of the airflow, as the airflow being out of the outlet opening (18) (See Figure 1, Column 2, lines 3-25, 63-68, and Column 3, lines 1-27).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the structural details of a structure in the clean channel, as taught by Pausch, to control the airflow in the intake manifold and improve the efficiency of the Negri device.

Regarding claims 32 and 34-36, Negri discloses an air induction system for inducing airflow into the intake of an internal combustion engine (10) having a turbocharger (20, 34), said system comprising:

an air filter (air cleaner snorkel 13); and

a clean air channel (an interior portion of an air cleaner 14 and a portion of 18 connecting to an air cleaner 14) in fluid communication with an outlet of said air filter so that an airflow is formed therein; said clean air channel having a structure located in front of the an inlet to said turbocharger (20, 34) comprising a diffuser (a portion of 18 connecting to an air cleaner 14) (See Figure 1) or means (a portion of 18 connecting to an air cleaner 14) for delivering and directing said airflow at least approximately 90 degrees from the direction of said airflow existing said outlet of the air filter to a direction of said airflow entering an inlet of said turbocharger (20, 34) (See Figure 1);

wherein said clean air channel (an interior portion of an air cleaner 14 and a portion of 18 connecting to an air cleaner 14) redirects said airflow at least approximately 180 degrees from a direction of said airflow entering said air inlet of said turbocharger (See Figure 1).

However, Negri fails to disclose the structural details of a structure in the clean channel comprising a diffuser in fluid communication with an expansion chamber.

Pausch teach that it is conventional in the elbow connection art, to utilize a structure (10) comprising diffuser (See Figure 1) being configured to have an interior surface that both longitudinally increasing in cross-sectional area and radially diverting

flow of said airflow; and an expansion chamber (30) in fluid communication with and located downstream of the diffuser, the expansion chamber (30) being configured to divert the flow of said airflow (See Figure 1); and said structure performing the function of restoring pressure head and substantially increasing the velocity of the airflow, as the airflow being out of the outlet opening (18) (See Figure 1, Column 2, lines 3-25, 63-68, and Column 3, lines 1-27).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the structural details of a structure in the clean channel, as taught by Pausch, to control the airflow in the intake manifold and improve the efficiency of the Negri device.

Claims 2, 8, 16, 22, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Negri et al. (Patent Number 4,142,494), in view of Pausch (Patent Number 4,995,645), and further in view of Beckley et al. (6,158,082).

The modified Negri device discloses the invention as recited above; however, fails to disclose a location of a bell-mouth transition.

Beckley teaches that it is conventional in the blower tube noise reduction art, to utilize a bell-mouth transition (63) positioned between the outlet of said expansion chamber (62) and the inlet of the turbocharger (Read as a blower 30), for reducing the velocity of the air flow within the clean air duct and the inlet of the turbocharger (See Figure 10-11 and 16-18).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a bell-mouth transition (63) positioned between the outlet of said plenum and the inlet of the turbocharger, as taught by Beckley, to reduce the turbulence and acoustic energy generated by the air flow through the plenum outlet, and also to improve the efficiency of the turbocharger by reducing the flow resistance in the air supply to the impeller/rotor of the compressor in the modified Negri device.

Claims 3-4, 9-10, 13, 17-18,and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Negri et al. (Patent Number 4,142,494), in view of in view of in view of Pausch (Patent Number 4,995,645) and Beckley et al. (Patent Number 6,158,082), and further in view of Design choice.

The modified Negri device discloses the invention as recited above; however, fails to disclose the radius of the bell-mouth transition being of approximately 20%, and from approximately 3 to approximately 30% of the effective diameter of the inlet of the turbocharger; and said plenum having a cross-sectional area lowering flow velocity through said plenum to less than 75 m/s.

One having an ordinary skill in the turbocharged internal combustion engine art, would have found the radius of the bell-mouth transition being of approximately 20%, and from approximately 3 to approximately 30% of the effective diameter of the inlet of the turbocharger; and said plenum has a cross-sectional area lowering flow velocity through said plenum to less than 75 m/s, as a matter of design choice. Moreover, there is nothing in the record, which establishes that the claimed dimension and cross

sectional area, presents a novel of unexpected result (See In re Kuhle, 526 F. 2d 553, 188 USPQ 7 (CCPA 1975)).

Claims 6-7 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Negri et al. (Patent Number 4,142,494), in view of in view of Pausch (Patent Number 4,995,645), and further in view of Design choice.

The modified Negri device discloses the invention as recited above; however, fails to disclose the cone angle being approximately 12 degrees, and in the range of approximately 4 to approximately 16 degrees.

One having an ordinary skill in the turbocharged internal combustion engine art, would have found the cone angle being approximately 12 degrees, and in the range of approximately 4 to approximately 16 degrees, as a matter of design choice, depending on the engine requirements. Moreover, there is nothing in the record, which establishes that the claimed angle, presents a novel of unexpected result (See In re Kuhle, 526 F. 2d 553, 188 USPQ 7 (CCPA 1975)).

Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Negri et al. (Patent Number 4,142,494), in view of in view of Pausch (Patent Number 4,995,645) and Beckley et al. (Patent Number 6,158,082), and further in view of Design choice.

The modified Negri discloses the invention as recited in the rejection of claim 8; however, fails to disclose the cone angle being approximately 12 degrees, and in the range of approximately 4 to approximately 16 degrees.

One having an ordinary skill in the turbocharged internal combustion engine art, would have found the cone angle being approximately 12 degrees, and in the range of approximately 4 to approximately 16 degrees, as a matter of design choice, depending on the engine requirements. Moreover, there is nothing in the record, which establishes that the claimed angle, presents a novel of unexpected result (See In re Kuhle, 526 F. 2d 553, 188 USPQ 7 (CCPA 1975)).

Conclusion

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB
December 01, 2005

Thai-Ba Trieu
Primary Examiner
Art Unit 3748